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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/715,576 | 11/17/2000 | Hua-Shuang Kong | 5000.89A | 5716 |

21176 7590 12/24/2002

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EXAMINER

KACKAR, RAM N

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1763

DATE MAILED: 12/24/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/715,576

Applicant(s)

KONG ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 10, 21, 22, 24 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10, 21-22, 24 and 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

Rejection of claims 1-2, 4-6, 10 and 42 under obviousness-type double patenting is removed because of applicants' terminal disclaimer.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 10, 21-22, 24, 29 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (US 4579080) in view of MacLeish et al (US 5653808).

Martin et al disclose a reactor vessel of quartz (fig 9-61) enclosed inside another cylinder of a dielectric material to make it transparent to electromagnetic radiation (Abstract), having a gas supply system (69) induction coils as a source of electromagnetic radiation (75) and a barrel type (Fig 9) or horizontal type (Fig 4 and Col 7 line 67), thermally responsive first susceptor portion (64 and Col 8 line 3-10), made of graphite coated with silicon carbide (Col 7 line 60), second susceptor portion as the metal coated cylinder around the first susceptor (Fig 9-74 and 61) spaced optimally to allow flow of reactive gases as well as allow them to heat each other (Col 11 line 24-28 and Col 12 line 52-63), first susceptor having plurality of pockets to receive substrates (Fig 9) .

Martin et al do not disclose the second susceptor made of graphite coated by silicon carbide.

Art Unit: 1763

MacLeish discloses an epitaxial apparatus containing a susceptor of two parts where the second susceptor is made of graphite coated by silicon carbide (Fig 2-32 and Col 4 line 21-25).

There fore it would have been obvious to one of ordinary skill in the art at the time invention was made to have a coating of silicon carbide on graphite on both parts of the susceptor so as to prevent migration of carbon from susceptor to substrate and reduce contamination.

3. Claims 1-2, 10, 21-22, 24 and 29-31 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmura et al (US 4848272) in view of MacLeish et al (US 5653808) and Martin et al (US 4579080).

Ohmura et al disclose a reactor vessel of quartz (Fig 1-1) which would make it transparent to electromagnetic radiation, having a gas supply system (10), induction coils as a source of electromagnetic radiation (13,14) being barrel type (Fig 1), thermally responsive (Col 4 line 15-38) first susceptor portion (2), thermally responsive (Col 4 line 15-38) second susceptor portion (5), spaced optimally to allow flow of reactive gases as well as allow them to heat each other (Fig 1), and plurality of pocket to receive substrates (Fig 1).

Ohmura et al do not disclose the first and second susceptor made of graphite coated by silicon carbide.

It is very common to coat components made of graphite with silicon carbide to prevent micro contamination and migration of carbon to substrate. Martin et al discloses a part of susceptor, which holds substrate to be made of graphite coated with silicon carbide (Col 7 line 60). Similarly MacLeish also discloses a part of susceptor made of graphite coated by silicon carbide (Fig 2-32 and Col 4 line 21-25).

Art Unit: 1763

There fore it would have been obvious to one of ordinary skill in the art at the time invention was made to have a coating of silicon carbide on graphite to prevent migration of carbon from susceptor to substrate.

Response to Amendment

Applicants amendment filed 10/25/2002 have been considered and accordingly amended claims 1 and 21 have not been rejected under 35 U.S.C. 102(b). These and the dependent claims have however been rejected under 35 U.S.C. 103(a).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Art Unit: 1763

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK
December 18, 2002


GREGORY MILLS
SUPERVISOR PATENT EXAMINER
TECHNOLOGY CENTER 1700